

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/587,300
Source: IFWP
Date Processed by STIC: 08/9/2006

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/587,300

CRF Edit Date: 8/9/2006
Edited by: DA

___ **Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line**

___ **Corrected the SEQ ID NO. Sequence numbers edited were:**

___ **Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:**

~~___~~ **Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers**

___ **Inserted mandatory headings/numeric identifiers, specifically:**

___ **Moved responses to same line as heading/numeric identifier, specifically:**

___ **Other:**



IFWP

RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,300

TIME: 14:13:10

Input Set : A:\pto.da.txt

Output Set: N:\CRF4\08082006\J587300.raw

```

4 <110> APPLICANT: Yule, D.I.
5     Wagner II, Larry
7 <120> TITLE OF INVENTION: Inositol 1,4,5-trisphosphate receptor
8     mutants and uses thereof
10 <130> FILE REFERENCE: 21108.0042U2
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/587,300
C--> 12 <141> CURRENT FILING DATE: 2006-07-26
12 <150> PRIOR APPLICATION NUMBER: PCT/US2005/002380
13 <151> PRIOR FILING DATE: 2005-01-26
15 <150> PRIOR APPLICATION NUMBER: 60/539,245
16 <151> PRIOR FILING DATE: 2004-01-26
18 <160> NUMBER OF SEQ ID NOS: 32
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 2710
24 <212> TYPE: PRT
25 <213> ORGANISM: Artificial Sequence
27 <220> FEATURE:
28 <223> OTHER INFORMATION: Description of Artificial Sequence:/note =
29     synthetic construct
31 <400> SEQUENCE: 1
32 Met Ser Asp Lys Met Ser Ser Phe Leu His Ile Gly Asp Ile Cys Ser
33 1           5           10           15
34 Leu Tyr Ala Glu Gly Ser Thr Asn Gly Phe Ile Ser Thr Leu Gly Leu
35           20           25           30
36 Val Asp Asp Arg Cys Val Val Gln Pro Glu Ala Gly Asp Leu Asn Asn
37           35           40           45
38 Pro Pro Lys Lys Phe Arg Asp Cys Leu Phe Lys Leu Cys Pro Met Asn
39           50           55           60
40 Arg Tyr Ser Ala Gln Lys Gln Phe Trp Lys Ala Ala Lys Pro Gly Ala
41 65           70           75           80
42 Asn Ser Thr Thr Asp Ala Val Leu Leu Asn Lys Leu His His Ala Ala
43           85           90           95
44 Asp Leu Glu Lys Lys Gln Asn Glu Thr Glu Asn Arg Lys Leu Leu Gly
45           100          105          110
46 Thr Val Ile Gln Tyr Gly Asn Val Ile Gln Leu Leu His Leu Lys Ser
47           115          120          125
48 Asn Lys Tyr Leu Thr Val Asn Lys Arg Leu Pro Ala Leu Leu Glu Lys
49           130          135          140
50 Asn Ala Met Arg Val Thr Leu Asp Glu Ala Gly Asn Glu Gly Ser Trp
51 145          150          155          160
52 Phe Tyr Ile Gln Pro Phe Tyr Lys Leu Arg Ser Ile Gly Asp Ser Val
53           165          170          175

```

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```

54 Val Ile Gly Asp Lys Val Val Leu Asn Pro Val Asn Ala Gly Gln Pro
55      180      185      190
56 Leu His Ala Ser Ser His Gln Leu Val Asp Asn Pro Gly Cys Asn Glu
57      195      200      205
58 Val Asn Ser Val Asn Cys Asn Thr Ser Trp Lys Ile Val Leu Phe Met
59      210      215      220
60 Lys Trp Ser Asp Asn Lys Asp Asp Ile Leu Lys Gly Gly Asp Val Val
61 225      230      235      240
62 Arg Leu Phe His Ala Glu Gln Glu Lys Phe Leu Thr Cys Asp Glu His
63      245      250      255
64 Arg Lys Lys Gln His Val Phe Leu Arg Thr Thr Gly Arg Gln Ser Ala
65      260      265      270
66 Thr Ser Ala Thr Ser Ser Lys Ala Leu Trp Glu Val Glu Val Val Gln
67      275      280      285
68 His Asp Pro Cys Arg Gly Gly Ala Gly Tyr Trp Asn Ser Leu Phe Arg
69      290      295      300
70 Phe Lys His Leu Ala Thr Gly His Tyr Leu Ala Ala Glu Val Asp Pro
71 305      310      315      320
72 Asp Phe Glu Glu Glu Cys Leu Glu Phe Gln Pro Ser Val Asp Pro Asp
73      325      330      335
74 Gln Asp Ala Ser Arg Ser Arg Leu Arg Asn Ala Gln Glu Lys Met Val
75      340      345      350
76 Tyr Ser Leu Val Ser Val Pro Glu Gly Asn Asp Ile Ser Ser Ile Phe
77      355      360      365
78 Glu Leu Asp Pro Thr Thr Leu Arg Gly Gly Asp Ser Leu Val Pro Arg
79      370      375      380
80 Asn Ser Tyr Val Arg Leu Arg His Leu Cys Thr Asn Thr Trp Val His
81 385      390      395      400
82 Ser Thr Asn Ile Pro Ile Asp Lys Glu Glu Lys Pro Val Met Leu
83      405      410      415
84 Lys Ile Gly Thr Ser Pro Leu Lys Glu Asp Lys Glu Ala Phe Ala Ile
85      420      425      430
86 Val Pro Val Ser Pro Ala Glu Val Arg Asp Leu Asp Phe Ala Asn Asp
87      435      440      445
88 Ala Ser Lys Val Leu Gly Ser Ile Ala Gly Lys Leu Glu Lys Gly Thr
89      450      455      460
90 Ile Thr Gln Asn Glu Arg Arg Ser Val Thr Lys Leu Leu Glu Asp Leu
91 465      470      475      480
92 Val Tyr Phe Val Thr Gly Gly Thr Asn Ser Gly Gln Asp Val Leu Glu
93      485      490      495
94 Val Val Phe Ser Lys Pro Asn Arg Glu Arg Gln Lys Leu Met Arg Glu
95      500      505      510
96 Gln Asn Ile Leu Lys Gln Ile Phe Lys Leu Leu Gln Ala Pro Phe Thr
97      515      520      525
98 Asp Cys Gly Asp Gly Pro Met Leu Arg Leu Glu Glu Leu Gly Asp Gln
99      530      535      540
100 Arg His Ala Pro Phe Arg His Ile Cys Arg Leu Cys Tyr Arg Val Leu
101 545      550      555      560
102 Arg His Ser Gln Gln Asp Tyr Arg Lys Asn Gln Glu Tyr Ile Ala Lys

```

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Input Set : A:\pto.da.txt

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103				565					570					575		
104	Gln	Phe	Gly	Phe	Met	Gln	Lys	Gln	Ile	Gly	Tyr	Asp	Val	Leu	Ala	Glu
105				580					585					590		
106	Asp	Thr	Ile	Thr	Ala	Leu	Leu	His	Asn	Asn	Arg	Lys	Leu	Leu	Glu	Lys
107				595				600						605		
108	His	Ile	Thr	Ala	Ala	Glu	Ile	Asp	Thr	Phe	Val	Ser	Leu	Val	Arg	Lys
109				610				615					620			
110	Asn	Arg	Glu	Pro	Arg	Phe	Leu	Asp	Tyr	Leu	Ser	Asp	Leu	Cys	Val	Ser
111	625					630						635				640
112	Met	Asn	Lys	Ser	Ile	Pro	Val	Thr	Gln	Glu	Leu	Ile	Cys	Lys	Ala	Val
113						645					650					655
114	Leu	Asn	Pro	Thr	Asn	Ala	Asp	Ile	Leu	Ile	Glu	Thr	Lys	Leu	Val	Leu
115						660					665					670
116	Ser	Arg	Phe	Glu	Phe	Glu	Gly	Val	Ser	Thr	Gly	Glu	Asn	Ala	Leu	Glu
117						675								685		
118	Ala	Gly	Glu	Asp	Glu	Glu	Glu	Val	Trp	Leu	Phe	Trp	Arg	Asp	Ser	Asn
119								695					700			
120	Lys	Glu	Ile	Arg	Ser	Lys	Ser	Val	Arg	Glu	Leu	Ala	Gln	Asp	Ala	Lys
121	705					710						715				720
122	Glu	Gly	Gln	Lys	Glu	Asp	Arg	Asp	Val	Leu	Ser	Tyr	Tyr	Arg	Tyr	Gln
123						725						730				735
124	Leu	Asn	Leu	Phe	Ala	Arg	Met	Cys	Leu	Asp	Arg	Gln	Tyr	Leu	Ala	Ile
125						740					745					750
126	Asn	Glu	Ile	Ser	Gly	Gln	Leu	Asp	Val	Asp	Leu	Ile	Leu	Arg	Cys	Met
127						755								765		
128	Ser	Asp	Glu	Asn	Leu	Pro	Tyr	Asp	Leu	Arg	Ala	Ser	Phe	Cys	Arg	Leu
129								775						780		
130	Met	Leu	His	Met	His	Val	Asp	Arg	Asp	Pro	Gln	Glu	Gln	Val	Thr	Pro
131	785							790						795		
132	Val	Lys	Tyr	Ala	Arg	Leu	Trp	Ser	Glu	Ile	Pro	Ser	Glu	Ile	Ala	Ile
133						805						810				815
134	Asp	Asp	Tyr	Asp	Ser	Ser	Gly	Ala	Ser	Lys	Asp	Glu	Ile	Lys	Glu	Arg
135						820					825					830
136	Phe	Ala	Gln	Thr	Met	Glu	Phe	Val	Glu	Glu	Tyr	Leu	Arg	Asp	Val	Val
137								840						845		
138	Cys	Gln	Arg	Phe	Pro	Phe	Ser	Asp	Lys	Glu	Lys	Asn	Lys	Leu	Thr	Phe
139								855						860		
140	Glu	Val	Val	Asn	Leu	Ala	Arg	Asn	Leu	Ile	Tyr	Phe	Gly	Phe	Tyr	Asn
141	865					870						875				880
142	Phe	Ser	Asp	Leu	Leu	Arg	Leu	Thr	Lys	Ile	Leu	Leu	Ala	Ile	Leu	Asp
143						885						890				895
144	Cys	Val	His	Val	Thr	Thr	Ile	Phe	Pro	Ile	Ser	Lys	Met	Thr	Lys	Gly
145						900						905				910
146	Glu	Glu	Asn	Lys	Gly	Ser	Asn	Val	Met	Arg	Ser	Ile	His	Gly	Val	Gly
147								920						925		
148	Glu	Leu	Met	Thr	Gln	Val	Val	Leu	Arg	Gly	Gly	Gly	Phe	Leu	Pro	Met
149								935						940		
150	Thr	Pro	Met	Ala	Ala	Ala	Pro	Glu	Gly	Asn	Val	Lys	Gln	Ala	Glu	Pro
151	945					950						955				960

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DATE: 08/09/2006

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```

152 Glu Lys Glu Asp Ile Met Val Met Asp Thr Lys Leu Lys Ile Ile Glu
153           965           970           975
154 Ile Leu Gln Phe Ile Leu Asn Val Arg Leu Asp Tyr Arg Ile Ser Cys
155           980           985           990
156 Leu Leu Cys Ile Phe Lys Arg Glu Phe Asp Glu Ser Asn Ser Gln Ser
157           995           1000           1005
158 Ser Glu Thr Ser Ser Gly Asn Ser Ser Gln Glu Gly Pro Ser Asn Val
159       1010           1015           1020
160 Pro Gly Ala Leu Asp Phe Glu His Ile Glu Glu Gln Ala Glu Gly Ile
161 1025           1030           1035           1040
162 Phe Gly Gly Ser Glu Glu Asn Thr Pro Leu Asp Asp His Gly
163           1045           1050           1055
164 Gly Arg Thr Phe Leu Arg Val Leu Leu His Leu Thr Met His Asp Tyr
165           1060           1065           1070
166 Pro Pro Leu Val Ser Gly Ala Leu Gln Leu Leu Phe Arg His Phe Ser
167           1075           1080           1085
168 Gln Arg Gln Glu Val Leu Gln Ala Phe Lys Gln Val Gln Leu Leu Val
169       1090           1095           1100
170 Thr Ser Gln Asp Val Asp Asn Tyr Lys Gln Ile Lys Gln Asp Leu Asp
171 1105           1110           1115           1120
172 Gln Leu Arg Ser Ile Val Glu Lys Ser Glu Leu Trp Val Tyr Lys Gly
173           1125           1130           1135
174 Gln Gly Pro Asp Glu Pro Met Asp Gly Ala Ser Gly Glu Asn Glu His
175           1140           1145           1150
176 Lys Lys Thr Glu Glu Gly Thr Ser Lys Pro Leu Lys His Glu Ser Thr
177           1155           1160           1165
178 Ser Ser Tyr Asn Tyr Arg Val Val Lys Glu Ile Leu Ile Arg Leu Ser
179       1170           1175           1180
180 Lys Leu Cys Val Gln Glu Ser Ala Ser Val Arg Lys Ser Arg Lys Gln
181 1185           1190           1195           1200
182 Gln Gln Arg Leu Leu Arg Asn Met Gly Ala His Ala Val Val Leu Glu
183           1205           1210           1215
184 Leu Leu Gln Ile Pro Tyr Glu Lys Ala Glu Asp Thr Lys Met Gln Glu
185           1220           1225           1230
186 Ile Met Arg Leu Ala His Glu Phe Leu Gln Asn Phe Cys Ala Gly Asn
187           1235           1240           1245
188 Gln Gln Asn Gln Ala Leu Leu His Lys His Ile Asn Leu Phe Leu Asn
189       1250           1255           1260
190 Pro Gly Ile Leu Glu Ala Val Thr Met Gln His Ile Phe Met Asn Asn
191 1265           1270           1275           1280
192 Phe Gln Leu Cys Ser Glu Ile Asn Glu Arg Val Val Gln His Phe Val
193           1285           1290           1295
194 His Cys Ile Glu Thr His Gly Arg Asn Val Gln Tyr Ile Lys Phe Leu
195           1300           1305           1310
196 Gln Thr Ile Val Lys Ala Glu Gly Lys Phe Ile Lys Lys Cys Gln Asp
197       1315           1320           1325
198 Met Val Met Ala Glu Leu Val Asn Ser Gly Glu Asp Val Leu Val Phe
199       1330           1335           1340
200 Tyr Asn Asp Arg Ala Ser Phe Gln Thr Leu Ile Gln Met Met Arg Ser

```

RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,300

TIME: 14:13:10

Input Set : A:\pto.da.txt

Output Set: N:\CRF4\08082006\J587300.raw

```

201 1345          1350          1355          1360
202 Glu Arg Asp Arg Met Asp Glu Asn Ser Pro Leu Phe Met Tyr His Ile
203          1365          1370          1375
204 His Leu Val Glu Leu Leu Ala Val Cys Thr Glu Gly Lys Asn Val Tyr
205          1380          1385          1390
206 Thr Glu Ile Lys Cys Asn Ser Leu Leu Pro Leu Asp Asp Ile Val Arg
207          1395          1400          1405
208 Val Val Thr His Glu Asp Cys Ile Pro Glu Val Lys Ile Ala Tyr Ile
209          1410          1415          1420
210 Asn Phe Leu Asn His Cys Tyr Val Asp Thr Glu Val Glu Met Lys Glu
211 1425          1430          1435          1440
212 Ile Tyr Thr Ser Asn His Met Trp Lys Leu Phe Glu Asn Phe Leu Val
213          1445          1450          1455
214 Asp Ile Cys Arg Ala Cys Asn Asn Thr Ser Asp Arg Lys His Ala Asp
215          1460          1465          1470
216 Ser Val Leu Glu Lys Tyr Val Thr Glu Ile Val Met Ser Ile Val Thr
217          1475          1480          1485
218 Thr Phe Phe Ser Ser Pro Phe Ser Asp Gln Ser Thr Thr Leu Gln Thr
219          1490          1495          1500
220 Arg Gln Pro Val Phe Val Gln Leu Leu Gln Gly Val Phe Arg Val Tyr
221 1505          1510          1515          1520
222 His Cys Asn Trp Leu Met Pro Ser Gln Lys Ala Ser Val Glu Ser Cys
223          1525          1530          1535
224 Ile Arg Val Leu Ser Asp Val Ala Lys Ser Arg Ala Ile Ala Ile Pro
225          1540          1545          1550
226 Val Asp Leu Asp Ser Gln Val Asn Asn Leu Phe Leu Lys Ser His Asn
227          1555          1560          1565
228 Ile Val Gln Lys Thr Ala Met Asn Trp Arg Leu Ser Ala Arg Asn Ala
229          1570          1575          1580
230 Ala Arg Arg Asp Glu Val Leu Ala Ala Ser Arg Asp Tyr Arg Asn Ile
231 1585          1590          1595          1600
232 Ile Glu Arg Leu Gln Asp Ile Val Ser Ala Leu Glu Asp Arg Leu Arg
233          1605          1610          1615
234 Pro Leu Val Gln Ala Glu Leu Ser Val Leu Val Asp Val Leu His Arg
235          1620          1625          1630
236 Pro Glu Leu Leu Phe Pro Glu Asn Thr Asp Ala Arg Arg Lys Cys Glu
237          1635          1640          1645
238 Ser Gly Gly Phe Ile Cys Lys Leu Ile Lys His Thr Lys Gln Leu Leu
239          1650          1655          1660
240 Glu Glu Asn Glu Glu Lys Leu Cys Ile Lys Val Leu Gln Thr Leu Arg
241 1665          1670          1675          1680
242 Glu Met Met Thr Lys Asp Arg Gly Tyr Gly Glu Lys Gly Glu Ala Leu
243          1685          1690          1695
244 Arg Gln Ile Leu Val Asn Arg Tyr Tyr Gly Asn Ile Arg Pro Ser Gly
245          1700          1705          1710
246 Arg Arg Glu Ser Leu Thr Ser Phe Gly Asn Gly Pro Leu Ser Pro Gly
247          1715          1720          1725
248 Gly Pro Ser Lys Pro Gly Gly Gly Gly Gly Gly Pro Gly Ser Gly Ser
249          1730          1735          1740

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/587,300

DATE: 08/09/2006
TIME: 14:13:11

Input Set : A:\pto.da.txt
Output Set: N:\CRF4\08082006\J587300.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:21; Xaa Pos. 2,3
Seq#:24; Xaa Pos. 2,4,5

VERIFICATION SUMMARY

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,300

TIME: 14:13:11

Input Set : A:\pto.da.txt

Output Set: N:\CRF4\08082006\J587300.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:7134 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:7138 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:21
L:7139 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0
L:7326 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:23
L:7693 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0

**Raw Sequence Listing before editing,
for reference only**



IFWP

RAW SEQUENCE LISTING

DATE: 08/04/2006

PATENT APPLICATION: US/10/587,300

TIME: 14:28:19

Input Set : A:\21108.0042U2 Sequence Listing.txt

Output Set: N:\CRF4\08042006\J587300.raw

4 <110> APPLICANT: Yule, D.I.
 5 Wagner II, Larry
 7 <120> TITLE OF INVENTION: Inositol 1,4,5-trisphosphate receptor
 8 mutants and uses thereof
 10 <130> FILE REFERENCE: 21108.0042U2
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/587,300
 C--> 12 <141> CURRENT FILING DATE: 2006-07-26
 12 <150> PRIOR APPLICATION NUMBER: PCT/US2005/002380
 13 <151> PRIOR FILING DATE: 2005-01-26
 15 <150> PRIOR APPLICATION NUMBER: 60/539,245
 16 <151> PRIOR FILING DATE: 2004-01-26
 18 <160> NUMBER OF SEQ ID NOS: 32
 20 <170> SOFTWARE: FastSEQ for Windows Version 4.0

Does Not Comply
 Corrected Diskette Needed
 (pg-1)

ERRORED SEQUENCES

7795 <210> SEQ ID NO: 32
 7796 <211> LENGTH: 9
 7797 <212> TYPE: PRT
 7798 <213> ORGANISM: Artificial Sequence
 7800 <220> FEATURE:
 7801 <223> OTHER INFORMATION: Description of Artificial Sequence; note =
 7802 synthetic construct
 7804 <400> SEQUENCE: 32
 7805 Gly Tyr Gly Glu Lys Gly Glu Ala Leu
 7806 1 5
 7808 21108.0042P1
 E--> 7810 1

deleted

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/587,300

DATE: 08/04/2006

TIME: 14:28:21

Input Set : A:\21108.0042U2 Sequence Listing.txt

Output Set: N:\CRF4\08042006\J587300.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:7134 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:7138 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:21
L:7139 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0
L:7326 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:23
L:7693 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
L:7810 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:32